FOURTH ANNUAL REPORT ON MARY VALLEY MANGANESE PROJECT

QUEENSLAND

Exploration Permit Mineral: 17672

BY

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1. *Queensland Department of Minerals & Energy*
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2.0 INTRODUCTION

The Mary Valley Manganese Project is located approximately 14 road kilometres southwest of Gympie Township in Queensland. The largest mine on the tenements controlled by Bluekebble Pty Ltd was at Amamoor No.1 Manganese Deposit (19,630t @ 51% Mn). The mine opened in 1920 and operated and then from 1960.

A total of 9,386 tonnes of ore was mined from the EPM area with the manganese grade ranging from 42% to 51% Mn with the limits of all the deposit not known either along strike or at depth.

Manganese ore has been mined intermittently from deposit in the Mary Valley since 1908, with the bulk of the output occurring in the most recent period (1957-1960, 1965-1966). Most of the ore produced was of metallurgical grade and as sent to Broken Hill Proprietary Co. Ltd at Newcastle for use in steel manufacture.

Historical assays have also indicated that the silica, iron and phosphate levels are all within the direct shipping ore parameters which further confirm the economic potential of standalone mining operations over the Mary Valley Manganese Project.

During the second anniversary date, Bluekebble Pty Ltd and Walla Mines Ltd entered into an option agreement whereby Walla Mines have commenced an IPO to list the Bluekebble Queensland assets. The company anticipates listing on the ASX by the 3rd quarter of 2011. The Prospectus will involve the issue of 25,000,000 Shares at an issue price of 20 cents each, together with one attaching Option for every two Shares, to raise a total of AUD$5,000,000 with provision to accept oversubscriptions of up to a further 10,000,000 Shares, with one attaching Option for every two Shares, total raise up to a further AUD$2,000,000 (max amount to raise is AUD$7,000,000).

After several attempts to raise the necessary funds and poor market conditions, Walla Mines Ltd failed to list on the ASX, subsequent to this Eclipse Metals Ltd (ASX Code: EPM) is largest shareholder within Walla Mines Ltd (controlling 56% of capital issue) have taken on the responsibility of the rentals, exploration commitment and all associated costs with keeping the EPM's in good standing. Walla Mines Ltd now is a subsidiary of Eclipse Metals Ltd. Currently, the EPM is pending renewal from the Department for another 2 years with the renewal documents lodged over 12 months ago.

In 2012, accordance with the Department of Emplyment, Skills and Mining, Walla Mines voluntary relinquish a portion of EPM17672. Under the conditions of RA 384, sub-block BRIS 1904W will be surrendered due to its close proximity to the town of Gympie (population exceeding 1,000 residents).

3.0 LOCATION AND ACCESS

The Mary Valley Manganese Project is located approximately 14 road kilometres southwest of Gympie Township in Queensland. The project comprises 4 application Exploration Licence areas which cover an approximate area of 169.3 km^2 that is easily accessed from the Brooloo Road from the Gympie Township. The EPM's areas lies on the GYMPIE 1:250,000 Geological Sheet Series (SG56-10) and Gympie (9445) 1:100,000 Geological Sheet Series.

The nearest shipping port from the EPM area is located at Brisbane, located in the south approximately 165 rail kilometres.

4.0 TENEMENTS

The project is comprised of one granted exploration licence (EPM) with the tenement details summarised in Table 1 and their locations are shown in Figures 1 and 2.

Table 1: Mary Valley Project - Tenement Summary

Project	Tenement Number	Status	Current Area		Current Holder	Granted Date	Expenditure Covenant ($)
			Blocks	(sq km)			
Mary Valley	EPM17672	Granted	54	167.4 km^2	Bluekebble Pty Ltd	30/06/09	$40,000

5.0 REGIONAL GEOLOGY & MINERALISATION

The Mary Valley Manganese deposits occur in a north-north-westerly trending belt (Carboniferous to Triassic in age) of low-grade metamorphic rocks situated in south-east Queensland. The area contains the Gympie Gold Field, once an important Australian gold producer and currently being re-investigated. In addition the area contains occurrences of copper, silver, lead, tungsten and mercury, as well as a number of manganese deposits, sufficiently abundant to warrant the name Mary Valley Manganese Belt (Burns, 1961).

Within the EPM area, the Amamoor Beds of Permian age, consisting of mudstone, slate, basic metavolcanics, chert, schist, jasper, greywacke contain the majority of manganese deposits. The Amamoor Beds are the site of the more important manganese ore occurrence in the Manganese Belt and are considered to have been deep-water, oceanic sediments association with island arc volcanism (Murray and Whitacker, 1982), (Murray, 1990). The manganese oxides of the Amamoor Beds, if syngenetic, may therefore be genetically related to the submarine manganese deposits of recent oceans (Roy, 1981).

The manganese deposits within the Mary Valley exhibit mineralogy and textures characteristic of at least four parageneses. The deposits consist mainly of isolated occurrences of braunite, together with a number of lower and higher valency manganese oxides and manganese silicates, in bedded radiolarian cherts and jaspers of Permian age. The parageneses are:

1. Braunite-hausmannite-spessartine-tephroite-quartz (metamorphic)
2. Braunite-quartz (primary)
3. Hydrated manganese silicates
4. Tetravalent manganese oxides

The primary mineralisation is interpreted as the result of the geochemical separation of Mn from Fe in a submarine exhalative system, and the precipitation of Mn as oxide within bedded radiolarian oozes and submarine lavas. During diagenesis this hydrothermal manganese oxide reacted with silica to produce primary braunite. The later geological of evolution of this volcanogenic sedimentary deposit involved metamorphism, hydrothermal veining by remobilized manganese, and supergene enrichment.

Deposition of the manganese oxide has apparently been controlled by faulting ad fracturing of the incompetent cherty and jasperoidal bed, with the fractures providing the fluid channel way and replacement of the host rock by manganese oxides occurring progressively away from those fractures.

Manganese ore has been mined intermittently from deposit in the Mary Valley since 1908, with the bulk of the output occurring in the most recent period (1957-1960, 1965-1966). Most of the ore produced was of metallurgical grade and as sent to Broken Hill Proprietary Co. Ltd at Newcastle for use in steel manufacture. Total production is approximately 35,600 tonnes of manganese ore.

Most deposits are lenticular or tabular in form, and are commonly fault bounded and/or stratabound. Minor post-ore faulting has modified the size and shape of some orebodies (Brooks, 1962).

Both Brooks (1962) and Ostwald (1992) considered the manganese deposits to be genetically related to their host rocks and have a deep-water marine origin. Supergene processes are also believed to have been important in concentrating the manganese and in producing the mineralogy evident in outcrop.

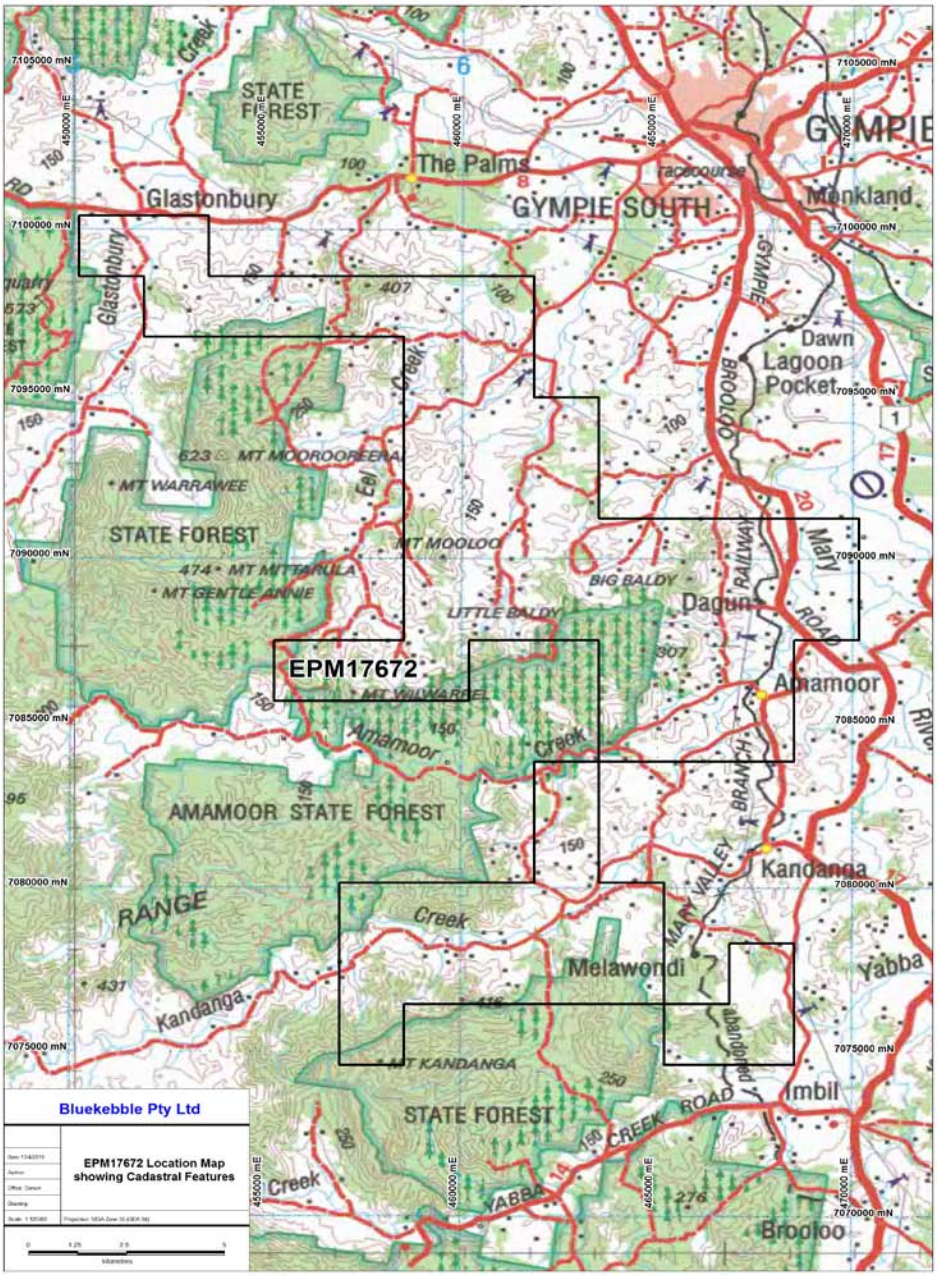

Figure 1: Mary Valley Project – Topographic Map

6.0 PREVIOUS EXPLORATION AND MINING HISTORY

The largest mines on the tenements controlled by Bluekebble Pty Ltd were at Cameron Manganese and the Amamoor No.1 Deposits. These mine opened in 1918 and operated intermittently until 1919 and then from 1958 to 1960. A total of 19,630 tonnes of ore was mined with a grade which ranged from 46% to 51% Mn with the limits of the deposit are not known ether along strike or down-dip. Marketable grade ore is known to extend 3.18m below the floor of the open-cut on the western side and the down-faulted section of deposit has not been traced across to the eastern side of the open-cut. Brooks (1961) has classified the Cameron Manganese Deposits as one of the best prospect for future production in the Mary Valley. There are numerous historic workings on the project.

A summary of manganese production on the Mary Valley Manganese Project is shown below:

Name	Manganese/Mine Workings	Years of Production	Ore production (tonnes)
Donaldson's Deposit	22.86m long x 9.14m wide x 2.74m deep	1949, 1960	25t @ 46% Mn, 15% silica
Eel Creek	35.05m long x 9.14m wide x 2.13m deep	1949, 1951, 1960	234t @ 50% Mn, 6% silica 38t @ 46% Mn, 15% silica
Mooloo T.O Prospect	15.24m long x 2.13m wide x	Unknown	42% Mn, 11.6% silica, 5.8% FeO2
Mt Mooloo Prospect	Trench 1 and 2: 13.71m long, 2.74m deep Trench 2: 15.24m long, 2.13m wide x 1.52m deep	1915	81t @ 50.3% Mn, 1.9% silica, 7.4% FeO2
Robert's Prospect	6.40m long x 4.26m wide x 3.04m deep	Unknown	15t @ 38.6% Mn
Dagun Prospect	6.1m long x 2.4m deep	1921, 1949	100t @ 48% Mn, 5% silica
Cameron	44.2.0m long x 3.65m wide x 19.81m deep	1918-19, 1958-1960	8,893t @ 46% Mn, 22% silica
Total			**9,386t of high grade Mn ore was mined from the EPM areas**

In 1962, J.H Brooks from the Geological Survey of Queensland undertook a detail review of the historical mining activities within the Mary Valley Manganese Belt. Samples of ore from a wide cross section of the Mary Valley deposits were collected and analysed at the Government Chemical Laboratory, Brisbane and X-ray analysis were carried out by the University of Queensland, Department of Mining and Engineering which are set out in the below table.

Location	Grade of Mn	Grade MnO_2	Grade SiO_2	Grade FeO_2	Grade BaO	Mineral present from X-Ray Analysis
Eel Creek	48.96%	66.30%	3.94%	7.15%	1.84	Pyrolusite, minor cryptomelane
Eel Creek	56.10%	82.50%	0.53%	3.77%	1.55	Braunite, hausmanite, cryptomelane
Eel Creek from shallow open cut	41.50%	66.50%	26.70%	3.80%	1.8	Massive Mn with some silica and red jasperiod material
Eel Creek	45.20%			1.40%	3.00	Massive Mn & Mn oxides
Dagun	50.80%	73.40%	5.52%	5.40%	3.83	Pyrolusite, minor cryptomelane
Dagun from pit (4.45m)	52.20%	77.20%	6.80%	6.60%		Selected sample of cellular ore with some soft Mn oxide

The iron content of the Mary Valley ores is low and the ores rarely if ever, subject to the penalty for iron in excess of 8.5% in metallurgical ore. Deposits in the northern part of the manganese belt, particularly around Mt Mooloo have slightly higher iron content than deposits to the south. Ore from Mt Mooloo has averaged 7.2% Fe and the Mooloo T.O, Eel Creek ores have average 3% to 4% iron. Botryoidal hematite is associated with manganese oxides at the Mooloo T.O prospect.

The phosphate content of the ores is low, ranging from 0.09% at the Dagun deposit. As 0.18% phosphorus is tolerated in metallurgical ore, the Mary Valley ores are never subject to a penalty for phosphorus content.

In 1992, J. Ostwald completed a research paper relating to the mineralogy, para-genesis and genesis of the braunite deposit of the Mary Valley Manganese Belt. Numerous samples were taken over the Carmon Manganese deposit (EPM17672) and were assayed by using a combination of ICP and XRF techniques which are listed below.

Element	Sample 10	Sample 11	Sample 12
SiO_2	22.61	24.30	25.10
TiO_2	0.06	0.07	0.10
Al_2O_3	1.01	0.86	0.51
MnO_2	**65.85**	**64.05**	**65.06**
Fe_2O_3	2.16	2.08	1.92
CaO	6.82	6.62	5.71
MgO	0.05	0.06	0.05
BaO	0.16	0.23	0.02
SrO	0.03	0.06	0.01
Na_2O	0.0	0.01	0.01
K_2O	0.02	0.06	0.03
P_2O5	0.05	0.05	0.06
SO_2	<0.01	<0.01	<0.01
LOI	0.82	0.56	0.77
Total	**99.81**	**99.21**	**100.02**
Co (ppm)	2500	2500	2500
Ni (ppm)	1850	1900	1950
Cu (ppm)	400	600	550
Pb (ppm)	550	400	450
Zn (ppm)	850	800	850
As (ppm)	3600	3500	3500

Ostwald completed other assaying over Mt Walli Manganese deposit (EPM17686) which was assayed by using a combination of ICP and XRF techniques which are listed below.

Element	Sample 19	Sample 20	Sample 21
SiO_2	34.71	38.61	35.42
TiO_2	0.06	0.06	0.04
Al_2O_3	5.27	6.36	7.17
MnO_2	**46.00**	**40.87**	**42.23**
Fe_2O_3	0.16	0.51	0.32
CaO	6.12	5.51	7.16

Element	Sample 19	Sample 20	Sample 21
MgO	2.13	2.16	2.2
BaO	1.16	0.74	0.82
SrO	0.02	0.01	0.08
Na_2O	0.26	0.33	0.18
K_2O	1.36	0.86	0.91
P_2O5	0.04	0.06	0.04
SO_2	<0.01	<0.01	<0.01
LOI	2.16	2.51	2.46
Total	**99.61**	**99.13**	**99.86**
Co (ppm)	1200	1200	1150
Ni (ppm)	3200	3300	3400
Cu (ppm)	600	650	650
Pb (ppm)	75	800	50
Zn (ppm)	600	400	550
As (ppm)	3500	3550	3500

Both the primary braunite and the metamorphic braunite have about 10% SiO_2 in their structure, and are thus normal braunite. The microanalyses (wt%) of primary and metamorphic braunite within the Mary Valley Manganese Belt.

Analysis	Mn_2O_3	Fe_2O_3	CaO	MgO	K_2O	SiO_2	Total
1	89.5	0.1	ND	ND	0.1	8.9	98.6
2	87.0	1.2	ND	ND	0.1	9.1	97.4
3	88.5	0.6	ND	ND	ND	10.1	99.2
4	88.3	2.1	ND	ND	ND	9.8	100.2
5	88.6	0.7	0.7	0.3	ND	9.7	99.7
6	88.6	0.2	ND	ND	0.1	9.9	98.0
7	88.0	0	ND	ND	ND	10.2	99.4
8	87.9	0.7	ND	0.4	ND	10.1	99.2
9	88.7	1.1	0.1	ND	0.1	9.6	100.1
10	89.0	0.7	ND	0.1	0.2	9.9	100.2
11	88.2	0.3	0.7	0.2	ND	0.2	99.4
12	87.9	0.1	0.4	0.3	ND	10.2	98.9
13	87.7	ND	1.1	ND	0.3	10.1	99.2
14	86.1	ND	0.8	ND	0.4	9.8	97.3
15	88.5	ND	0.6	ND	0.3	10.0	99.8
16	89.0	ND	0.7	ND	ND	9.9	99.6
17	88.4	0.2	1.2	0.1	0.4	9.9	100.6
18	87.8	0.1	1.4	ND	0.3	10.2	99.8
19	86.3	ND	0.8	ND	0.6	10.1	97.8
20	88.2	ND	0.4	ND	0.2	10.1	98.9

Analysis 1-10 primary,

11-20 metamorphic.

'Oxide stoichiometry expressed as Mn_2O_3,

ND Not detecte

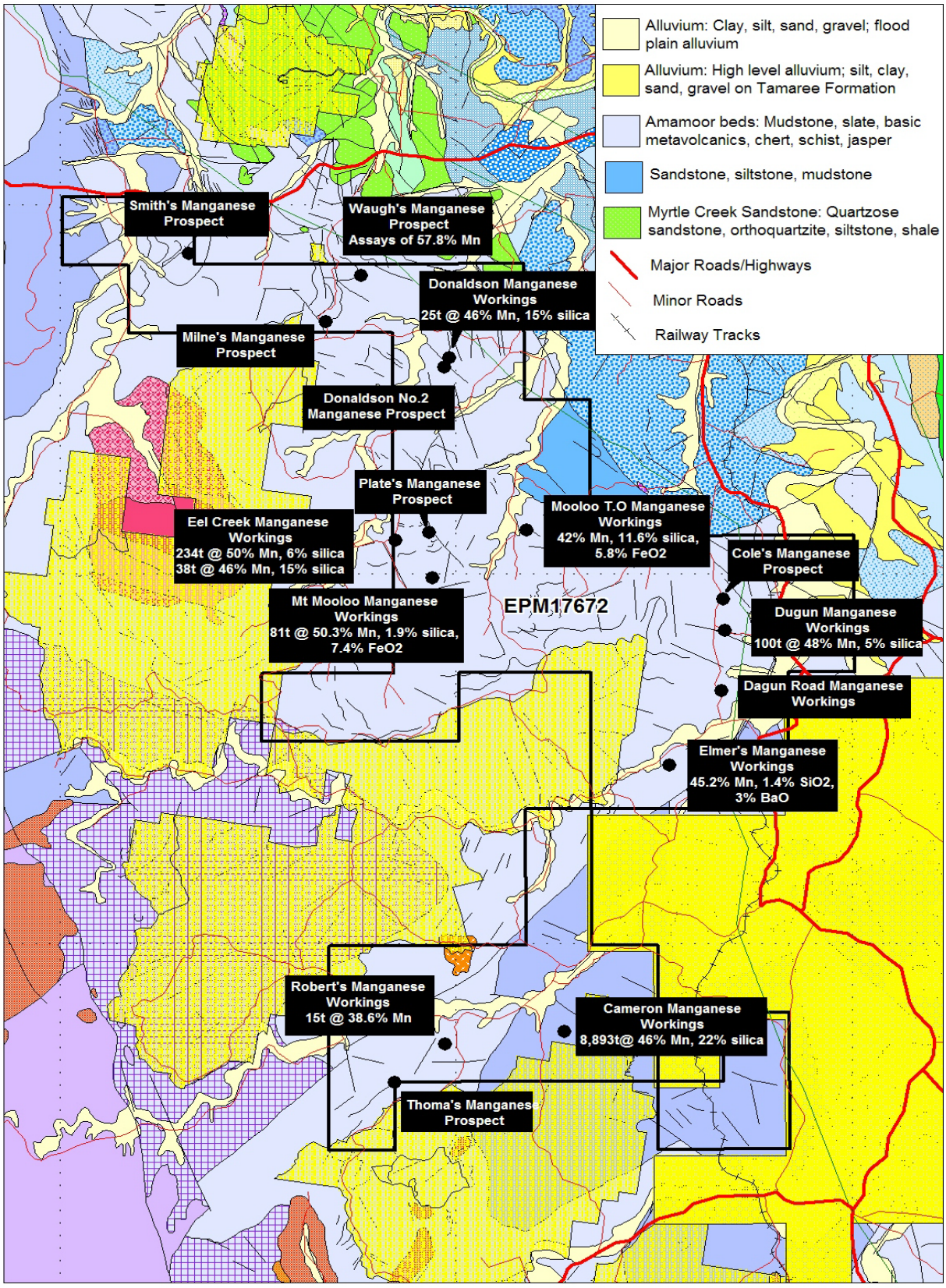

Figure 2: EPM17672 – Regional Geology with Prospect Location Map

7.0 WORK COMPLETED AND DISCUSSION

During January 2010 consulting geologists Kastellco Geological Consultancy ("**KGC**") conducted a review of existing historical exploration data within the Queensland Mines Department Survey Database. This was conducted for all the Project areas to identify any high potential manganese exploration targets and resulted in the identification of several targets that warrant further work.

The targeting was undertaken at a high level to identify areas of interest that stand out in the regional re-interpreted geophysical data. Historical prospects were reviewed to determine the effectiveness of the previous exploration and evaluate remaining potential within the Exploration Licence area.

Through detail interpretation of airborne magnetic from the Queensland Geological Survey, the following magnetic anomalies were identified as shown in Figure 3. The location of the magnetic anomalies targets is represented in Figure 3.

During the second anniversary date, Bluekebble Pty Ltd and Walla Mines Ltd entered into an option agreement whereby Walla Mines have commenced an IPO to list the Bluekebble Queensland assets. The company anticipates listing on the ASX by the 3rd quarter of 2011. The Prospectus will involve the issue of 25,000,000 Shares at an issue price of 20 cents each, together with one attaching Option for every two Shares, to raise a total of AUD$5,000,000 with provision to accept oversubscriptions of up to a further 10,000,000 Shares, with one attaching Option for every two Shares, total raise up to a further AUD$2,000,000 (max amount to raise is AUD$7,000,000).

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8.0 EXPLORATION POTENTIAL

1. No systematic exploration has been conducted on the manganese prospects and historical mine areas within the Gladstone project.
2. Historical assays have also indicated that the silica, iron and phosphate levels are all within the direct shipping ore parameters which further confirm the economic potential of standalone mining operation.
3. Excellent potential for further discovering manganese throughout the area.
4. No systematic exploration has been conducted to delineate any further sub cropping manganese or deeper mineralized zones.
5. The best surface indications of manganese occur in a structural zone. Numerous drill targets could be developed with limited electromagnetic survey.
6. Testing, refinement and successful deployment of helicopter borne EM surveys for direct detection of blind manganese deposits will transform regional to prospect scale exploration, thus suitable for relatively rapid coverage.

9.0 PROPOSED EXPLORATION

Kastellco Geological Consultancy recommends that Walla Mines Ltd exploration programmes should be designed to test the tenement for manganese targets is described below;

1. Carry out airborne EM surveys over high grade base metal areas generated by the surface sampling programme to delineate any manganese targets at depth for future drilling.
2. Detailed regional structural interpretation with strong emphasis on the identification of untested mineralised structural trends

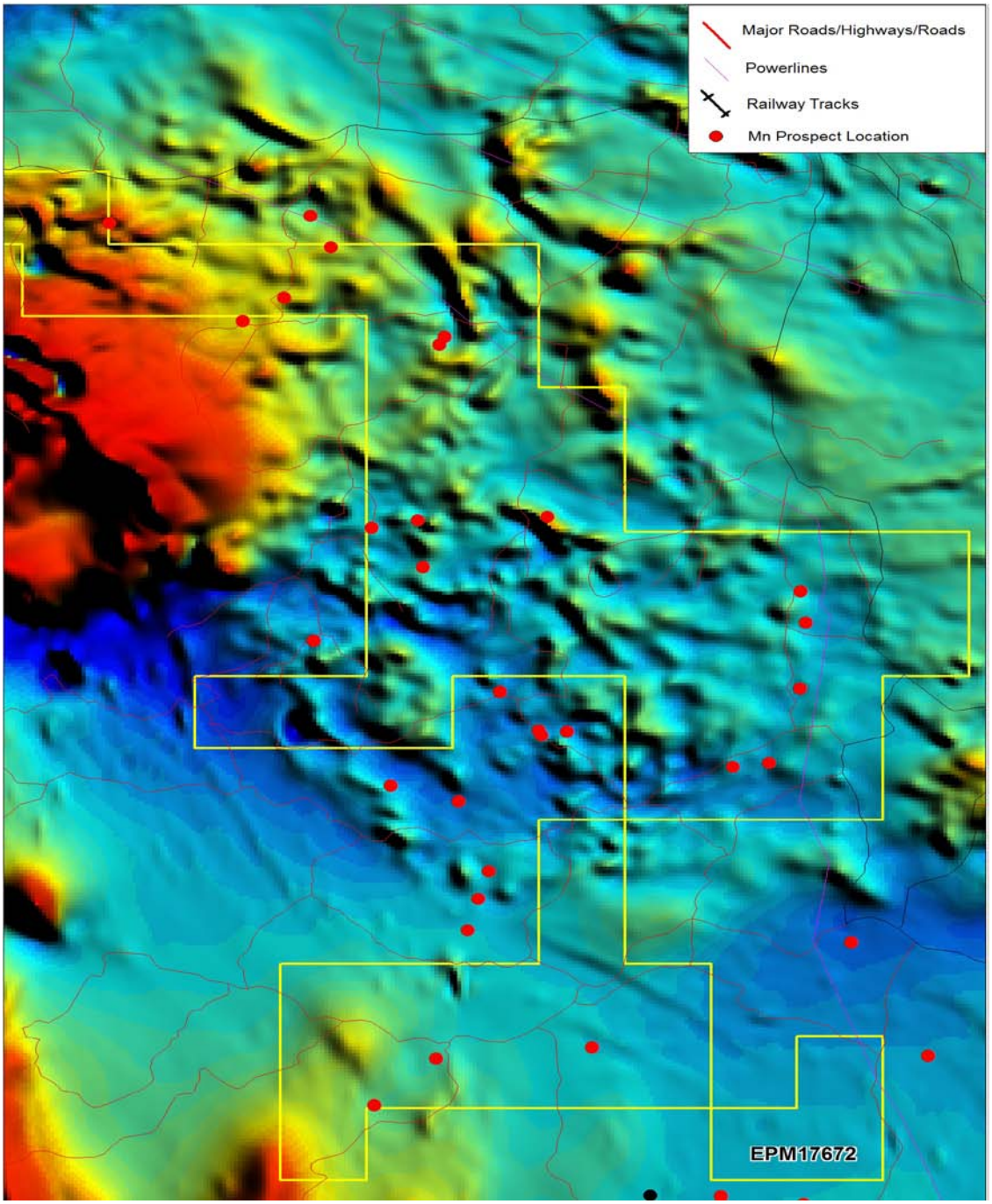


Figure 3: EPM17672 – Regional TMI Image with Prospect Location Map

10.0 REFERENCES

Brooks, JH, 1962. Mary Valley Manganese Deposits Part 1 and Part 2. Queensland Government Mining Journal, 63, 195-211, 258-277.

Ostwald, J, 1992. Mineralogy, paragenesis and genesis of the braunite deposits of the Mary Valley Manganese Belt, Queensland, Australia. Queensland Government Mining Journal, 27, 326-335.

Appendix 1:

Summary of Manganese Prospects/Mines within EPM 17672

Extracted from the 1962 Queensland Mining Journal

Manganese Prospect within EPM17672

Smith Prospect

The ore is of the dense, hard grey-black ore with impurities consist of irregular patches of silica with minor amounts of vein quartz and iron oxide. Some of the boulders on the steep hill slope contain fairly high grade metallurgical ore. The main outcrop area is 24.38m long and 3.04m wide and appears to have a north-south strike.

Waugh's Prospect

Two outcrops, a few hundred yards apart were inspected. The south-easterly outcrop consisted of fairly high grade botryoidal ore with some clay impurity. The outcrop is 1.21m in diameter and quartz veined, massive jasper boulder are strewn round about. Work is warranted to determine the extent of the mineralisation. A sample taken from the outcrop assayed **57.8% Mn** and 0.6% SiO_2.

The second outcrop is approximately 1m in diameter and consists of manganese stained jasper with some pockets of siliceous manganese ore and hard, black-blue metallurgical grade ore.

Milne's Prospect

A lens of hard, blue-black crystalline ore with subordinate amounts of massive ore occurs within a horizon of jasperoid rock which is overlain by brown weathered andesite. Quartz-epidote veins traverse the jasperoid rock horizon. The manganese lens N.25^o W and dips 45^o SW. A 1.82m face of rock and soil has been exposed over a length of 15.24m. Metallurgical ore is exposed over a length of 3.04m and a width of 1m, but this may not represent the full extent of the deposit, exploration work is warranted in this prospect area.

Donaldson's Prospect

The ore is of the hard, massive, lustrous type with chalcedonic silica as the main impurity. Irregular almond shaped lenses of manganese ore occurs in manganese stained jasperoid rock. Two lenses were exposed at the time of inspection, one of which is 3.04m and 1.21m wide. This is apparently the remnant of the larger lens from which 25t of ore were produced. The ore assayed approximately **46% Mn** and 15% SiO_2.The open cut is 22.86m long and up to 9.14m wide and 2.74m in depth. There may be concealed lenses of ore in the vicinity of the exposed lenses.

Eel Creek Prospect

Both metallurgical and battery grade ore has been produced from this deposit. The metallurgical ore is hard, massive grey black and lustrous (cryptomelane) and is usually iron-stained. The battery ore consists of hard lustrous blue-black cellular material with pockets of soft black manganese oxides (pyrolusite and cryptomelane). Native copper is wire form was founded on a joint plane in this deposit.

The country rocks are coarsely-banded jasper and massive quartzite which strike N.25^o W and dips 60^o to 85^o E. Minor folds pitch 75^o. Quartz and quartz-epidote veins are of common occurrence in the jasper and manganese staining is widespread.

Three pockets of ore are exposed in the open cut which is 35.05m long, 9.14m wide and 2.13m in depth. After 175t of ore were produced from the southernmost pocket in 1949 it was thought that the deposit was worked out, until 1959 were bulldozing exposed further two lenses of manganese

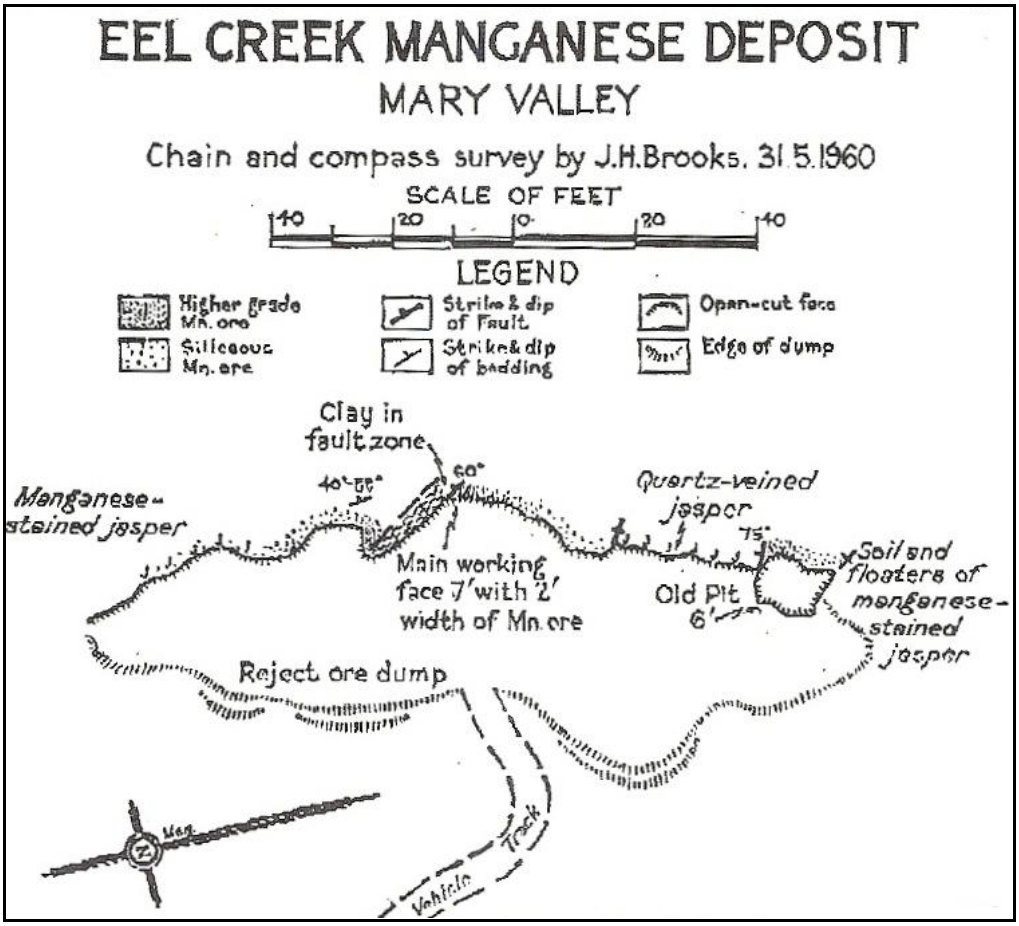
mineralisation which were offset by cross faults. It is possible that there may be other concealed bodies of manganese ore separated from known lenses by cross-faults.

Mooloo T.O Prospect

Hard, massive, black-blue lustrous manganese ore is associated with jasper and botryoidal hematite in a succession of red silicified shales. Jasperoid manganese ore is exposed over a length of 15.24m and a maximum of 2.13m and 2.74m in depth. A trail parcel of ore is reported to have assayed **42% Mn** and selected sample assayed 47.1% Mn, 5.8% Fe_2O_3 and 11.6% SiO_2. Other small outcrops of manganese ore are reported to occur in this area but these were not inspected.

Plate's Prospect

Previous inspections of the prospect outline hard, massive, blue-black manganese ore which occurs within successions of jasper and jasperoid quartzites. Floaters of micro-diorite were observed on the hill slope below the deposit. A small lens of siliceous manganese ore is exposed in a pit 9.14m long, 3.65m in width and 0.91m in depth.



Mount Mooloo

Manganese lenses crop out just west of the crest of north-south trending jasper ridge. Cert and red shale are interbedded with the jasper in this area. There are two trenches on the deposit. The southern trench is 13.71m long and up to 2.74m deep. It exposes a lens of high grade ore over a width of 0.6m. The hard, black-blue ore often has a botyoidal form (cryptomelane). The lens appears to strike northwesterly direction. The northern trench is approximately 91m away and is 15.24m long, 2.13m wide and 1.52m in depth. It exposes a manganese lens 1.52m wide which strikes N.15°W.

Eighty one tons of high grade ore produced in 1915 averaged **50.3% Mn**, 7.4% Fe and 1.9% SiO_2, no precise data is available.

Dagun Prospect

Pockets of manganese ore outcrop over a distance of nearly a quarter of a mile in a north-north west to northerly direction. Most of the ore is of the hard, massive blue-black type (cryptomelane, psilomelane) and the remainder is coarsely-cellular with soft black manganese oxides. Several pits have been sunk on the deposit. The southern most pit is 6.09m in width by 2.43m deep. To the north, there is a group of 4 pits within a area 24.38m long and 19.81m. The pits are 2.43 to 3.04m in diameter and range from 1.82 to 3.35m deep.

In each pit remnants of pocket of manganese ore are exposed. Jointing appears to have been the main control of manganese concentration in these deposits. Production amounted to more than 100t but the precise figures are not known. There appears to be good prospects that shows pocket of manganese ore existing along this line. Ore samples assayed as follows:

Grade	Grade of Mn%	Grade of SiO_2	Grade of Fe%	Grade of P%
Highest Grade	54.90%	-	3.50%	0.10%
Lowest Grade	40.50%	-	4.20%	0.12%
Average Grade	48.00%	4.50%	3.50%	0.09%

Elmer's Prospect

Hard, massive, black-blue lustrous manganese ore with some black soft material surrounded by shales and jasper. A sample of ore take within shallow pit assayed **45.2% Mn**, 1.4% SiO_2 and 3% BaO. In 1957, Mr. T.H Sanders bulldozer another outcrop of manganese ore approximately third of a mile east-north-east of Elmer's prospect. No significant tonnage of marketable ore delineated.

Robert's Prospect

Pockets of manganese ore occur in three horizons of thick-bedded, jasperoid quartzite which strike N 10°E to N15° E and dip 45° – 50°W. The eastern and western horizons are 33.52m and 22.86m respectively from the middle horizon. The hard, dense massive ore has a steely appearance and usually contains finely granular quartz.

Eastern Horizon: Three small pocket of manganese ore have been exposed in pits ranging from 0.91 to 1.52m deep. Jasperoid manganese ore is exposed in the base of the pits and a mall amount of rhodonite is associated with the manganese oxides.

Middle Horizon: A small open cut 6.4m long, 4.26m wide and 3.04m deep has been excavated. Metallurgical grade ore is exposed in the base of the open cut. An outcrop of massive, manganese

stained rock extends for a distance of 45.72m to the south of the open cut. The jasper is fairly quartz veined with evidence of the control of manganese concentration jointing can readily seen in this horizon.

Two pits, each 1.21m deep on the western zone expose jasperoid manganese ore. A sample from these lenses assayed **43% Mn** and 25.2% SiO_2 but a sample representative of the 15t of ore mined assayed 38.6% Mn.

Thomas Prospect

Boulders and small outcrops of manganese ore occur over a distance of 18.28m in a north easterly direction. The hard, dense, massive black ore is encrusted by soft black manganese ore. The manganese horizons is underlain by red silicified shales which strike N 55^o to 70^o E and dip 50^o to 60^o SE. The deposit is virtually unexplored and bulldozing is warranted to define it size and depth.

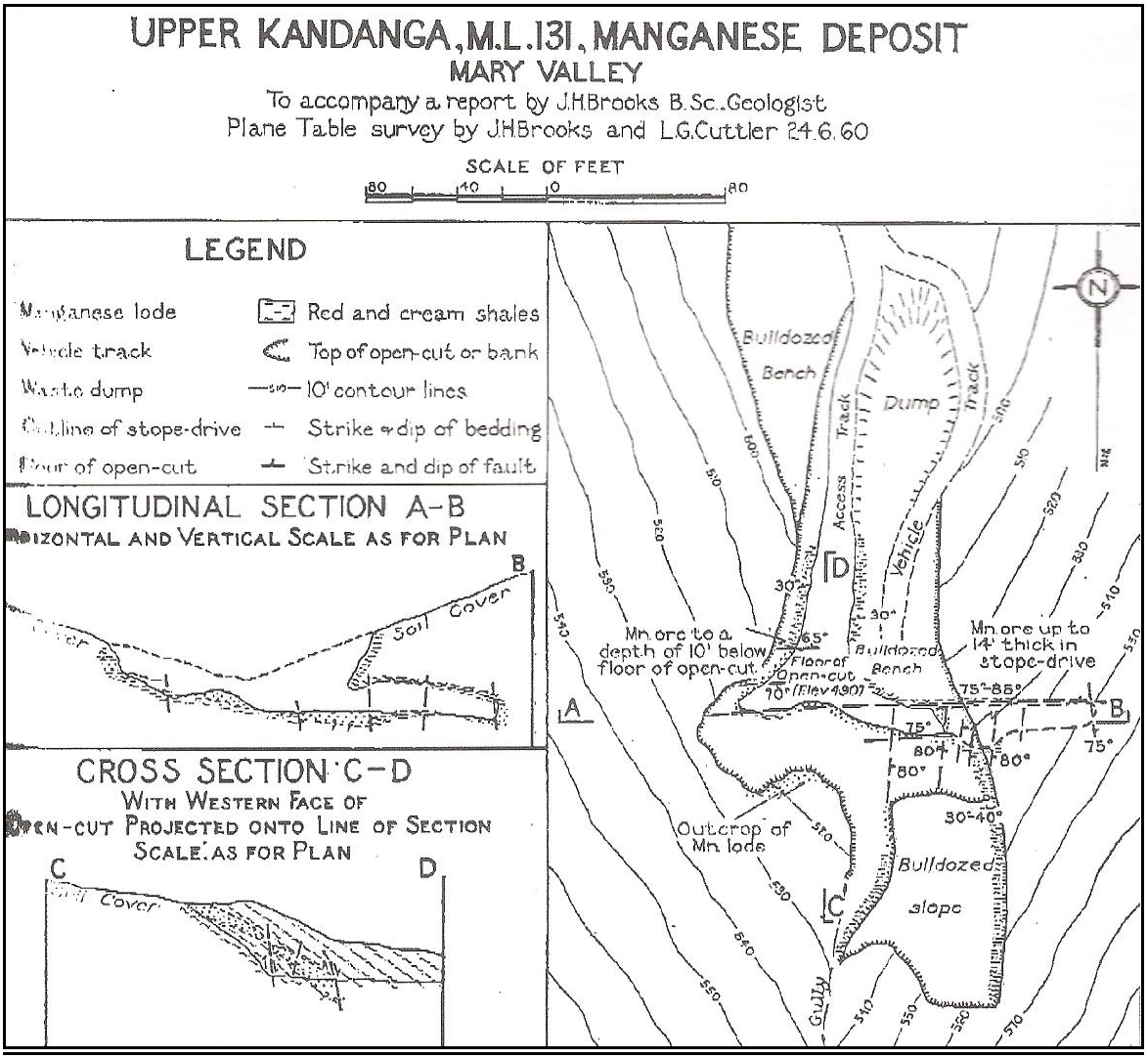
Cameron (Upper Kandanga)

The deposit is mainly composed hard, grey-black manganese ore (braunite) and is characterized by the presence of abundant dissolved grains of glassy quartz. The manganese lens strikes N 80^o W and dips 35^o N. It is interbedded with shales and narrow bands of quartzites and jasper. Faulting is of common occurrence in the manganese deposit, the two principal sets of faults being – (1) Strike faults which dip 65^o N to 70o S and (2) Transverse faults which strike north-south to N 10^o E and dip 75^o E to vertical. Jointing is also well developed parallel to the fault directions. The intersection of the two sets of faults and joints results in rhomb-shaped bocks of ore and significant changes in grade often occur between adjacent blocks of ore. This is partly o be explained by the post-ore displacement and also by the influence of pre-ore faulting and jointing on the concentration of manganese oxides (see cross section, next page). One important strike fault can be trace for the full length of the deposit and displaces the manganese lens north side down (see diagram next page). The down faulted section of the deposit was first exposed on the western side of the open cut where the displacement amounts to only 0.6m to 0.91m.

The deposit has been worked over a length of 44.2m and a true width of up to 3.65m. Mining has extended down-dip for a distance of 21.33m and the greatest vertical depth below surface of the base of the workings is 19.81m. The open cut is 32m long, 18.28m wide and 10.66m in depth.

Grade	Grade of Mn%	Grade of SiO_2	Grade of Fe%	Grade of P%
Highest Grade	48.97%	23.85%	1.70%	0.094%
Lowest Grade	45.17%	10.23%	0.75%	0.060%
Average Grade	46.00%	22.00%	1.20%	0.085%

The limits of the deposit are not known either along strike or down dip. Marketable grade ore is known to extend 2.13m below the floor of the open-cut on the western side and the down-faulted section of deposit has not been traced across to the eastern side of the open-cut. Brooks (1961) has classified the Cameron Manganese Deposit as one of the best prospect for future production in the Mary Valley.


UPPER KANDANGA, M.L. 131, MANGANESE DEPOSIT
MARY VALLEY
To accompany a report by J.H.Brooks B.Sc., Geologist
Plane Table survey by J.H.Brooks and L.G.Cuttler 24.6.60
SCALE OF FEET
80 40 0 80
LEGEND
Manganese lode
Red and cream shales
Vehicle track
Top of open-cut or bank
Waste dump
10' contour lines
Outline of stope-drive
Strike & dip of bedding
Floor of open-cut
Strike and dip of fault
LONGITUDINAL SECTION A-B
HORIZONTAL AND VERTICAL SCALE AS FOR PLAN
B
Soil Cover
CROSS SECTION C-D
WITH WESTERN FACE OF
OPEN-CUT PROJECTED ONTO LINE OF SECTION
SCALE AS FOR PLAN
C
D
Soil Cover
Bulldozed Bench
Dump
Track
Access
Vehicle
Track
Mn ore to a depth of 10' below floor of open-cut
Floor of Open-cut 70' (Elev 4907)
Bulldozed Bench
Mn ore up to 14' thick in stope-drive
Outcrop of Mn lode
Bulldozed slope
Gully
A
B
C
D
N